UIO # 00987JD

SSPORTS ENVIRONMENTAL DETACHMENT
YARD ROUTE SLIP

CODE	STOP	NAME	EXTENSION	DATE
120	N/A	B. JACOBSON	2-3278	06/04/1999

[X] ACTION [ ] COORDINATE [ ] PREPARE DRAFT [ ] RETENTION
[ ] AS DISCUSSED [ ] FILE [ ] PREPARE FOR ISSUE [ ] RETURN
[ ] COMMENT/CONCUR [ ] INFORMATION [ ] REPORT BACK [ ]

TO CODE	INITIALED BY	INITIALED DATE
120 GRACE	BJB	6/7/99
120	UBK	6/9/99
FINLINSON		

SUBJECT

TWD NO. 98-1562, REVISION A

Please review and approve TWD 98-1562, Revision A.

06/07/1999

PCB Remediation Site Estimating Sheet

Estimate No.	314		Building No.	M37		Parcel No.	08-A
			TWD 1562	Rev A			
Engineering						**# MDs**	**Cost**
Site Walkthrough						0.50	$198
TWD Development						0.00	$0
TWD Revision						1.00	$396
Develop Estimate						0.50	$198
RFD Processing						0.50	$198
				Total Engineering Cost			$990
Sampling				**# Samples**		**# MDs**	**Cost**
Sample time				23		7.59	$3,006
Lab Costs				23			$1,380
				Total Sampling Cost			$4,386
Mobilization						**# MDs**	
Mobilize Inside						0.00	$0
Mobilize Outside						2.00	$792
Demobilize Inside						0.00	$0
Demobilize Outside						2.00	$792
				Total Mobilization Cost			$1,584
Scabbling		**ft²**	**Depth (in)**		**HW Disposal/#**	**# MDs**	**Cost**
Scabble time		0	0.00			0.00	$0
Equipment Rental							$0
HW Disposal					0.00		$0
				Total Scabbling Cost			$0

Excavation	Dumpster Qty	ft³	# of trips off site	# of Workdays	HW Disposal cost/#	# MDs	Cost
Jackhammer Use		0			0.00	0.50	$198
Asphalt/Concrete		270	2.00	0.67	0.00	2.67	$1,056
Soil		70	0.35	0.12	0.00	0.47	$185
Equipment Rental							
Backhoe							$500
Dumpster	3.000						$3,000
Dump Truck*							$450
Front End Loader*							$500
Bobcat*							$300
*SSPORTS Equipment				**Total Excavation Cost**			$5,389

Other	Dumpster Qty	ft²		HW Disposal cost/#	# MDs	Cost
Solvent Wipedown		20		0.05	0.10	$48
Material (PPE, etc.)						$773
			Total Miscellaneous Cost			$822
LABOR	0.64					
MATERIAL	0.36		**Total Site Remediation Cost**			$13,170

PCB DECONTAMINATION TECHNICAL WORK DOCUMENT (TWD)

PCB-CONTAMINATED SPILL SITE:
SOIL ADJACENT TO CONCRETE PAD

TWD # 98-1562, Revision A

BLDG # M37

SSPORTS ENVIRONMENTAL DETACHMENT
VALLEJO, CALIFORNIA

Prepared by: Barry Jacobson
SSPORTS ENVIRONMENTAL DETACHMENT
Code 120 PCB
Vallejo, Calif. 94592-0135

PCB DECONTAMINATION
TECHNICAL WORK DOCUMENT

Prepared By:	B. Jacobson Code 120 PCB	11/23/98 Date
Reviewed By:	G. Grace Code 120 PCB	11/30/98 Date
Approved By:	W. Finlinson Code 120 PCB (Project Manager)	12/1/98 Date

Rev.	Description	Approval	Date
A	PCB contamination found on the asphalt, and in the soil and on the brick and concrete surrounding the pad. B. Jacobson 6/7/99 BJS 6/7/99	WFinlinson	6/9/99

1.0 PURPOSE

1.1 The purpose of this TWD is to excavate soil on all sides of the transformer pad west of Building M37, remove brick and concrete adjacent to the pad (some of it under the soil), and remove asphalt west of the pad. Building M37 is in Parcel 08-A. Samples at these sites exceed the acceptable PCB level of ≤ 1 ppm, as follows:

Sample No. 8-3711 (Concrete):	54 ppm	Sample No. 9-1089 (Asphalt):	55 ppm
Sample No. 8-3712 (Concrete):	2013 ppm	Sample No. 9-1090 (Asphalt):	1.8 ppm
Sample No. 8-3713 (Concrete):	2249 ppm	Sample No. 9-1091 (Asphalt):	11 ppm
Sample No. 8-3714 (Concrete):	3743 ppm	Sample No. 9-1092 (Asphalt):	4.8 ppm
Sample No. 8-3715 (Soil):	2 ppm	Sample No. 9-1093 (Asphalt):	27 ppm
Sample No. 8-3717 (Soil):	1.6 ppm	Sample No. 9-1094 (Asphalt):	52 ppm
Sample No. 8-3719 (Soil):	3 ppm	Sample No. 9-1095 (Concrete):	19.6 ppm
Sample No. 8-3720 (Soil):	1.4 ppm	Sample No. 9-1237 (Asphalt):	6.2 ppm
Sample No. 9-1088 (Soil):	8 ppm	Sample No. 9-1238 (Asphalt):	21 ppm

Confirmatory Sample No. 227PC 7650 (Brick): 30,000 ppm (according to SIMS, these samples were concrete)
Confirmatory Sample No. 227PC 7651 (Brick): 61 ppm
Confirmatory Sample No. 227PC 7652 (Concrete): 310 ppm

4/14/99

1.2 The referenced sample numbers are marked at the site. Refer to enclosure (3) for the Building M37 transformer pad sketch. The sample data is provided in enclosure (1) to this TWD for SSPORTS samples only.

2.0 DESCRIPTION

2.1 One foot of soil shall be excavated, where possible (and all of the soil where less than one foot is present), and the concrete, brick, and asphalt will be removed, using the procedures required by this TWD.

3.0 REFERENCES

3.1 OPNAVINST 5100.23D; Navy Occupational Safety and Health Program Manual.

3.2 Workplan PCB Decontamination for Spill Sites and Machinery

3.3 SSPORTSDET INSTRUCTION 4110.2A, Chg. 1, Enclosure (2); SSPORTS Environmental Detachment, Vallejo Hazardous Waste Management

3.4 29 CFR 1926, Subpart P; Excavations

3.5 USAC EM 385-1-1; U.S. Army Corps of Engineers Safety and Health Requirements Manual, September 1996

4.0 HEALTH & SAFETY/GENERAL NOTES

4.1 Performed all work in strict adherence to the Navy Occupational Safety and Health (OSH) Manual (reference 3.1), the Health and Safety Plan (reference 3.2, Section 9), and the SSPORTS Hazardous Waste Management Plan (reference 3.3).

4.2 At least two people shall be present at all times while chemical or physical hazards exist and access is being controlled to the PCB work area. One person shall be designated on-site health and safety coordinator who shall monitor and maintain safe working conditions at the site and initiate emergency response in the event of accident or injury. This position need not be full time and may be in addition to other duties.

4.3 Personal protective equipment (PPE) shall be as follows:

Saranex-coated Tyvek coveralls.
Viton gloves with latex gloves worn over them.
Leather gloves (during soil removal).
Steel-toed safety shoes
Nitrile or neoprene foot coverings or disposable rubber boots (during soil removal).
Face shield (8" minimum) with vented goggles (during soil removal).
Half-facepiece, air-purifying respirator with HEPA filter or full-face PAPR (Power Air Purification Respirator) with HEPA filter.

Only workers who come in direct contact with soil and dust are required to wear PPE.

4.4 The main hazard at the site is PCB-contaminated dust, soil, concrete and asphalt. As needed, a light water mist may be applied to the work area for dust abatement during soil excavation. Workers shall stand upwind when dust is being generated. Slip and trip hazards exist. There are no electrical hazards in the work area off of the concrete pad; however, part of the excavation will be in the vicinity of the transformer. Noise caused by operation of soil-, concrete- and asphalt-removal equipment is a hazard. Noise restrictions shall be double hearing protection between 0 and 50 feet, and single hearing protection between 50 and 100 feet. Ventilation is adequate because all work is outside of buildings.

<u>High voltage electrical equipment exists on this site</u>. Always assume these circuits are energized until the circuit has been verified as deenergized. Equipment at this site may need to be deenergized, and locked out/tagged out by qualified personnel before work can proceed. Qualified personnel are high voltage electricians knowledgeable with regard to the lockout/tagout procedure in place for high voltage equipment installed at this facility. Obtain a clearance from Island Energy that circuits and equipment at the site are deenergized (if necessary) and the site is safe for performance of the remediation described in this TWD. When work is complete, and remediation equipment has been removed and resamples taken, notify Island Energy so that lockout/tagout may be removed and circuits reenergized, if applicable.

4.5 Temperatures above 100 degrees are not expected, nor is any hot work authorized, so PCBs will not be airborne because of high temperature.

4.6 Use rope or tape barriers to control work area access. A hot zone is defined as the excavation area west of the concrete pad. Enter the site to the minimum extent possible. Decontaminate personnel and equipment outside of the hot zone in a 3- to 6-foot warm zone. Use of a drop cloth in the warm zone is recommended to minimize spread of contamination.

4.7 Do not eat, drink or smoke in the work area. If direct skin contact with PCB-contaminated material occurs, wash the skin area and hands with soap and water as soon as possible. In addition, personnel shall wash their hands prior to breaks and at the end of their shift. An emergency eyewash station with a 15-minute minimum capacity shall be accessible in ten seconds or less from the work area.

4.8 Phone numbers are as follows:

Emergency:	9-911	OSHE:	562-3245/3200
Ambulance:	9-911 or 562-3040	Project Mgr.:	562-3280
Fire:	9-911 or 562-3333	Hazardous Waste	
Police:	9-911 or 562-3040	and Sampling Group:	9-480-9488
Hospital:	9-911 or 651-1000		

4.9 **Specific Instructions**

4.9.1 Underground Service Alert North (USA North), (1-800-227-2600) shall survey and mark conspicuously all underground utilities in the vicinity prior to any excavation work. This process takes at least two working days lead time.

USA Location Request No.: _____.
(Enter here and at the bottom of enclosure (5), page 2).

4.9.2 Complete the Utilities Site Safety Form check-off list and the Underground Utilities Location Sketch (see enclosure (5)) to document utilities found present at the site. Extreme care must be taken when working near underground utilities since the exact location is often unknown. Use only hand tools to expose the underground utilities.

4.9.3 The Project Engineer and Project Supervisor shall review the local utility installation maps (site maps) to verify completion of the on-site identification of all anticipated utilities. Address any discrepancies to the utility/installation owners and resolve them prior to opening the excavation.

4.9.4 If utilities are present, positively identify their locations per enclosure (4) prior to excavating soil/gravel.

4.9.5 The Project Engineer and Project Supervisor shall investigate the possibility of deenergizing or depressurizing all active utilities within the area of concern prior to opening the excavation. The Program Manager shall concur below prior to opening the excavation with energized or pressurized lines (Project Supervisor enter "N/A" and sign and date otherwise).

Program Manager: _____ _____
Name Date

4.9.6 Trenching and excavation work shall comply with OSHA requirements detailed in reference 3.4 and reference 3.5. As a minimum, the following safety requirements shall be strictly observed:

a. Appropriate perimeter barriers shall be used around all open pits and excavations (see Section 25B of reference 3.5).

b. Excavations shall be inspected daily by a Competent Person before workers enter them.

c. Trenches deeper than five feet shall be securely shored. No worker shall descend above his waist level into an unshored trench, unless directed by a supervisor who is a Competent Person.

d. A trench deeper than four feet is considered to be a confined space.

e. Whenever possible, workers will not enter trenches or excavations. When workers are in the excavation, other personnel in the immediate area shall be available to respond in the event of an emergency.

f. Appropriate access methods, such as ladders or ramps accessible within 25 feet, shall be used to enter the excavation when it is four feet or more in depth. Do not ride in backhoe buckets, etc.

g. Evaluation by the on-site Health and Safety Coordinator and the results of air monitoring will determine the level of protection for entry personnel. The minimum acceptable protection level will be Level D.

h. Stop logs or other heavy barriers shall be used to prevent vehicles from rolling into the excavation.

i. **Sources of vibration and heavy objects or equipment shall not be situated on the edge of a trench unless steps are taken to ensure the stability of the trench wall by a Competent Person.**

j. As much as possible, do not allow water to accumulate in trenches or excavations. Surface runoff water shall be prevented from entering the excavation.

k. Excavated materials (spoils) shall not be stored closer than two feet from the edge of the trench.

l. Excavation shall be halted if one of the following conditions exists:

(1) Structural risk to adjacent buildings or other significant structures develops.
(2) Soil staining indicates that a contamination plume may be present.

5.0 PROCEDURE

5.1 Support Area (Personal Decontamination)

Establish a support area (for setting down equipment, for personal decontamination, clothing removal, etc.) prior to beginning work. Address questions and concerns regarding the support area to Code 100.1, OSHE Office, at 2-3245/3200.

5.2 HSP Forms

Code 120PCB has provided minimum specific health and safety information in this TWD. Changes that may have occurred since the TWD was written may require a change to the health and safety procedures. Prior to beginning work, the On-Site Health and Safety Coordinator shall review the health and safety information. If a change is required, contact the TWD originator. HSP Acceptance Form (enclosure (2)) must be completed and signed by each person performing the work.

5.3 Decontamination Evolution *(Place an x or number on applicable line)*

Initial Decontamination _____ Repeat Decontamination ___1___ (1,2,3, etc.)

5.4 SPECIFIC INSTRUCTIONS

This job is broken up into four areas, based on the type of work to be performed, as follows:

Area A (A1 and A2):	Remove any soil cover, then remove all brick and concrete.
Area B:	Remove all asphalt.
Area C:	Remove all brick and concrete.
Area D:	Excavate soil.

Ensure that an area is covered with plastic after the work there is finished, to avoid cross-contaminating it while working on an adjacent area.

5.4.1 Area A (A1 and A2)

5.4.1.1 Ensure that enclosure (4) has been completed. Using a backhoe, shovels, or other excavation tools, as required, remove the soil cover, where present, down to the concrete/brick in the area shown in enclosure (3), sheet 1. Properly contain, store, and label the removed soil as PCB-contaminated waste.

5.4.1.2 Using hand and/or power tools, remove the brick and concrete down to the underlying soil.

5.4.1.3 Take soil samples as shown in enclosure (3), sheet 2.

5.4.1.4 Properly contain, store, label, and dispose of contaminated debris, solvents, absorbents, rags, protective clothing, gloves, and other materials resulting from the decontamination per Section 5.7.

5.4.2 Area B

5.4.2.1 Ensure that enclosure (4) has been completed. Using a backhoe, saw, shovels, or other tools, as required, remove the asphalt cover down to the soil in the area shown in enclosure (3), sheet 1. Properly contain, store, and label the removed soil as PCB-contaminated waste.

5.4.2.2 Take soil samples as shown in enclosure (3), sheet 2.

5.4.2.3 Properly contain, store, label, and dispose of contaminated debris, solvents, absorbents, rags, protective clothing, gloves, and other materials resulting from the decontamination per Section 5.7.

5.4.3 Area C

5.4.3.1 Ensure that enclosure (4) has been completed. Using hand and/or power tools, remove the brick and concrete down to the underlying soil in the area shown in enclosure (3), sheet 1. **Note: This may be performed at the same time the similar work of paragraph 5.4 is being accomplished.**

5.4.3.2 Take soil samples as shown in enclosure (3), sheet 2.

5.4.3.3 Properly contain, store, label, and dispose of contaminated debris, solvents, absorbents, rags, protective clothing, gloves, and other materials resulting from the decontamination per Section 5.7.

5.4.4 **Area D**

5.4.4.1 Ensure that enclosure (4) has been completed. Using a backhoe, shovels, or other excavation tools, as required, remove one foot of soil in the area shown in enclosure (3), sheet 1. Properly contain, store, and label the removed soil as PCB-contaminated waste.

5.4.4.2 Take soil samples as shown in enclosure (3), sheet 2.

5.4.4.3 Properly contain, store, label, and dispose of contaminated debris, solvents, absorbents, rags, protective clothing, gloves, and other materials resulting from the decontamination per Section 5.7.

5.5 **Other Instructions**

Take soil samples as shown in enclosure (3). Take a swipe sample from the joint of the manway cover, and a concrete sample just adjacent to it (still on the vault), at the vault just west of Transformer T-1808. Also take a replicate sample, a swipe sample from each excavation tool, and one equipment blank (wipe sample of an unused sampling tool).

5.6 The shop performing the decontamination shall sign below to certify that the decontamination conforms to reference 3.2 and this TWD.

Code 130 PCB performed decontamination as required.

Code 130 PCB _____ Date _____

Return completed information package (TWD and HSP forms) for this document to the project manager, Code 120 PCB, Building 229, third floor.

5.7 **Place all PCB-contaminated waste, cleaning residue, miscellaneous debris and Personal Protective Equipment (PPE) into 55-gallon containers that meet United Nations (UN) performance-oriented packaging standards per Section 5.0 of reference 3.3.** Place liquid-filled containers in drip pans to contain any leakage during storage or transport. Follow specific instructions below:

1. Store waste at a Satellite Accumulation Area that will be established within a controlled area at the worksite. Waste drums shall be secured wrench-tight if not in use or at the end of each shift. The following requirements apply to the storage of PCB waste: Place liquid-filled containers on drip pans, mark accumulation start date on each container, and mark each container with the words "HAZARDOUS WASTE" labeled with composition and physical state of the waste, hazardous waste properties, and generator name and address. Large volumes of contaminated material may be placed into appropriately sized, plastic-lined, PCB-Certified transport roll-off bins supplied by the PCB roll-off contractor. Roll-off bins are the contractor's (SSPORTS) responsibility.

2. Attach a Hazardous Waste label and "PCB CAUTION" sticker to the container. Fill in the information on the Hazardous Waste Label, including the Accumulation Start Date. **The Accumulation Start Date is the date you start to fill the container.** Hazardous waste labels shall be on all waste.

3. Specify the contents as "PCB-contaminated Hazardous Waste" or "PCB cleaning residue, miscellaneous debris, PPE," as applicable. Attach a copy of the PCB analysis results to the container in a sealed plastic bag.

4. **Record on each container the date that the container was completely filled and a unique identification number.**

5. Complete a Hazardous Waste Generator Identification Tag for each container. Attach the tag to each container generated and deliver the generated waste to the Hazardous Waste and Sampling Team, Code 130, per reference 2.1. When all appropriate samples have been taken and results are analyzed, properly classify and label this waste for shipment to a Treatment, Storage, and Disposal (TSD) Facility.

6. **Within three days after becoming full, deliver completely filled drums to the Hazardous Waste and Sampling Team, Code 130 (for work at Mare Island) or the site Hazardous Waste Accumulation Area (HWAA) (for work away from Mare Island) for disposal.**

7. **Within three days after completion of decontamination, cleanup, and sampling activities, deliver remaining (not full) 55-gallon drums of PCB-contaminated waste to the Hazardous Waste and Sampling Team, Code 130 (for work at Mare Island) or the site HWAA (for work away from Mare Island) for disposal.**

8. PCB-Certified Roll-offs may be stored on site within the controlled work area using the following guidelines.
   - They shall be properly labeled (as specified in subparagraphs a through d above),
   - They shall be inspected weekly (looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors).
   - If rainwater intrusion is possible, cover the roll-offs with tarps or polyethylene and **seal with plastic wrap**.

5.8 Code 130 PCB shall sign below to certify that the hazardous waste generated by this TWD has been properly contained, stored, labeled, and disposed of per Section 5.7 and reference 3.3.

Code 130 PCB _____ Date _____

6.0 Code 120 PCB Review and Resampling Results Acceptance

6.1 Code 120 PCB conduct review and approval of the information package.

For results to be satisfactory they must be ≤ 1 ppm (solid) or ≤ 10 μg/100 cm² (swipes).

Results are: ☐ SATISFACTORY ☐ UNSATISFACTORY (remarks required)

Remarks: _____

_____

_____

_____

Code 120 PCB _____ Date _____

7.0 Enclosures

(1) Lab Results for Samples Taken
(2) Health and Safety Plan Acceptance Form
(3) Building M37 Excavation Site
(4) Underground Utilities Excavation Safety
(5) Utilities Site Safety Form and Underground Utility Location Sketch

MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3711	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1042		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	54 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
Page 1 of 18

MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO: 99MI00172
DOC. NO: 90379
SAMPLE NO: 8-3712
DESCRIPTION: 08-A, Bldg. M37
EXTRACTION NO: SD1043

DATE SAMPLED: 4/07/99
DATE REC'D : 4/08/99
DATE EXTRACTED: 4/13/99
DATE REPORTED: 4/19/99

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	2013 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3713	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1044		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	2249 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3714	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1045		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	3743 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3715	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1046		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	2 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3717	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1048		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	1.6 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

TWD 98-1562, Rev. A
Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO:	99MI00172	DATE SAMPLED:	4/07/99
DOC. NO:	90379	DATE REC'D :	4/08/99
SAMPLE NO:	8-3719	DATE EXTRACTED:	4/13/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/19/99
EXTRACTION NO:	SD1050		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	3 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/09/98

LAB NO: 99MI00172
DOC. NO: 90379
SAMPLE NO: 8-3720
DESCRIPTION: 08-A, Bldg. M37
EXTRACTION NO: SD1051

DATE SAMPLED: 4/07/99
DATE REC'D : 4/08/99
DATE EXTRACTED: 4/13/99
DATE REPORTED: 4/19/99

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	1.4 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

TWD 98-1562, Rev. A
Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO:	99MI00211	DATE SAMPLED:	4/26/99
DOC. NO:	90406	DATE REC'D :	4/26/99
SAMPLE NO:	9-1088	DATE EXTRACTED:	4/27/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/99
EXTRACTION NO:	SD1110		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	8 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Enclosure (1)
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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO:	99MI00211	DATE SAMPLED:	4/26/99
DOC. NO:	90406	DATE REC'D :	4/26/99
SAMPLE NO:	9-1089	DATE EXTRACTED:	4/27/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/99
EXTRACTION NO:	SD1111		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	55 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO: 99MI00211
DOC. NO: 90406
SAMPLE NO: 9-1090
DESCRIPTION: 08-A, Bldg. M37
EXTRACTION NO: SD1112

DATE SAMPLED: 4/26/99
DATE REC'D : 4/26/99
DATE EXTRACTED: 4/27/99
DATE REPORTED: 4/30/99

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	1.8 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO:	99MI00211	DATE SAMPLED:	4/26/99
DOC. NO:	90406	DATE REC'D :	4/26/99
SAMPLE NO:	9-1091	DATE EXTRACTED:	4/27/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/99
EXTRACTION NO:	SD1113		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	11 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO: 99MI00211
DOC. NO: 90406
SAMPLE NO: 9-1092
DESCRIPTION: 08-A, Bldg. M37
EXTRACTION NO: SD1114

DATE SAMPLED: 4/26/99
DATE REC'D : 4/26/99
DATE EXTRACTED: 4/27/99
DATE REPORTED: 4/30/99

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	4.8 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO:	99MI00211	DATE SAMPLED:	4/26/99
DOC. NO:	90406	DATE REC'D :	4/26/99
SAMPLE NO:	9-1093	DATE EXTRACTED:	4/27/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/99
EXTRACTION NO:	SD1115		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	27 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/98

LAB NO:	99MI00211	DATE SAMPLED:	4/26/99
DOC. NO:	90406	DATE REC'D :	4/26/99
SAMPLE NO:	9-1094	DATE EXTRACTED:	4/27/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/99
EXTRACTION NO:	SD1116		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	52 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

11/20/9

LAB NO:	99MI00211	DATE SAMPLED:	4/26/9
DOC. NO:	90406	DATE REC'D :	4/26/9
SAMPLE NO:	9-1095	DATE EXTRACTED:	4/27/9
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	4/30/9
EXTRACTION NO:	SD1117		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	19.6 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

12/08/98

LAB NO:	99MI00232	DATE SAMPLED:	5/12/99
DOC. NO:	90417	DATE REC'D :	5/13/99
SAMPLE NO:	9-1237	DATE EXTRACTED:	5/14/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	5/18/99
EXTRACTION NO:	SD1193		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	6.2 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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MARE ISLAND NAVAL SHIPYARD
ENVIRONMENTAL LABORATORY
CODE 120 LAB
Calif. DHS Certificate No. 2249

12/08/98

LAB NO:	99MI00232	DATE SAMPLED:	5/12/99
DOC. NO:	90417	DATE REC'D :	5/13/99
SAMPLE NO:	9-1238	DATE EXTRACTED:	5/14/99
DESCRIPTION:	08-A, Bldg. M37	DATE REPORTED:	5/18/99
EXTRACTION NO:	SD1194		

ANALYSIS: POLYCHLORINATED BIPHENYLS
METHOD: Modified EPA 8081

Arochlor	PCB's	Report Limit
A1260	21 ppm	1 ppm

QA/QC Data is available from the Laboratory upon request.

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Health and Safety Plan Acceptance Form

INSTRUCTIONS: Each person shall complete this form prior to beginning work at the PCB work area. Attach the completed forms to the TWD.

TWD No.: **98-1562, Revision A**

PCBCM#: **Soil/Concrete/Brick/Asphalt Excavation (Building M37)**

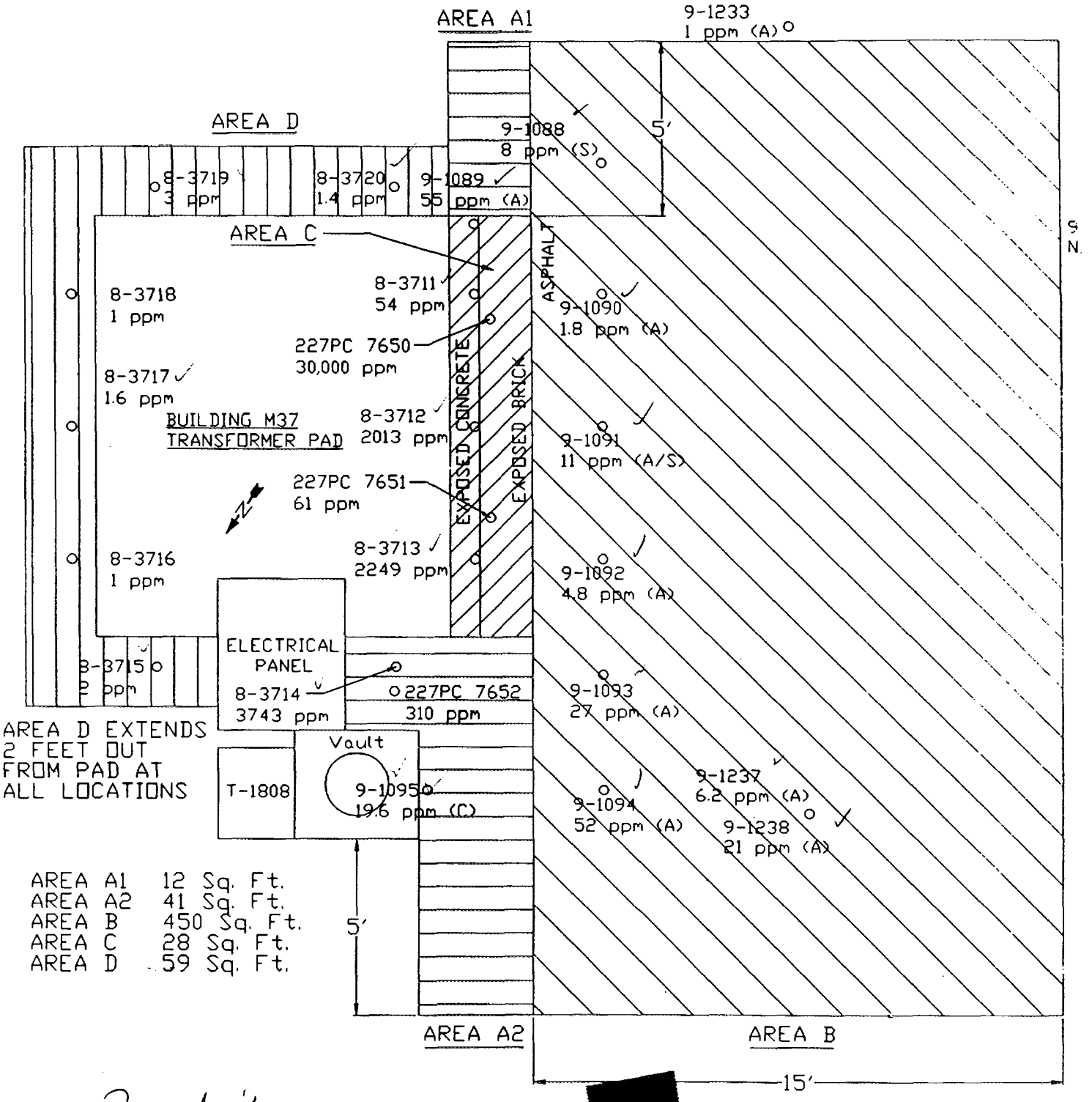
By my signature below, I acknowledge that I have read and understand the contents of the Health and Safety requirements for this project, specifically reference 3.2, paragraphs 3.2.1 through 3.2.6 and all of paragraph 9.0, and Section 4 of this TWD. I agree to perform my work in accordance with the Health and Safety requirements.

Signature	Signature	Signature
Print name	Print name	Print Name
Code	Code	Code
Date	Date	Date
Signature	Signature	Signature
Print name	Print name	Print Name
Code	Code	Code
Date	Date	Date

Project Supervisor sign below verifying that the above listed employees have been briefed on the Health and Safely requirements of this TWD.

Signature	Print Name	Date

NOTE: This page may be duplicated as necessary.



Prob. don't need - collecting new Soil Samples See pg 2 (missing)

missing 9-3718 & 8-3716

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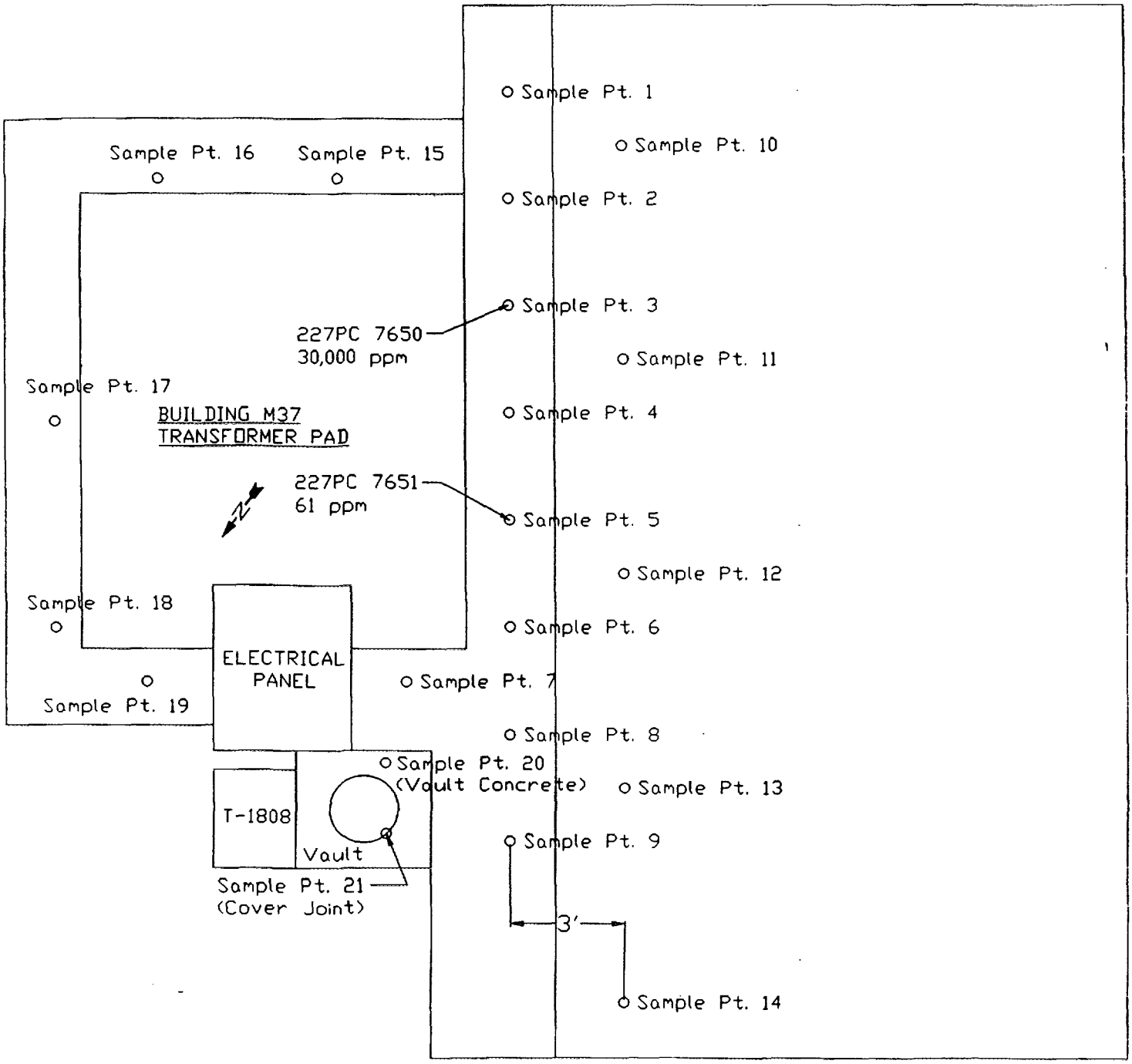

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Underground Utilities Excavation Safety

1. **Purpose:** This instruction provides the minimum requirements and procedures for the safe location, identification, and exposure of underground utilities during excavation and trenching activities. These requirements will be incorporated into Health and Safety Plans as appropriate.

2. **Applicability:** This instruction applies to all excavations, including but not limited to, asphalt removal, sampling operations and hand tool soil removal. These requirements and procedures are applicable to all excavation sites worked by SSPORTS Environmental. At work sites outside of California, local requirements will be investigated prior to starting work and any additional requirements identified will be included in the site specific work instructions.

3. **Definitions:**

   a. Excavation — Any man-made cut, cavity, trench, or depression in an earth surface, formed by earth removal.

   b. Established Utility Excavation Area of Concern — The established utility excavation area of concern is defined as the anticipated excavation area perimeter plus five (5) feet in all directions.

   c. Project Supervisor — Individual assigned by the work instruction to assure the safe execution of work as identified in the work instruction. For unexploded ordnance (UXO) work this assignment is delegated to the UXO Specialist. Any other delegation of this responsibility will be concurred to by the Operations Manager and the Program Manager.

   d. Trench — A narrow excavation (in relation to its length) made in the surface of the ground. In general, the depth is greater than the width, but the width of the trench (measured at the bottom) is not greater than 15 feet.

   e. Equipment Operator — Individual trained, qualified, and currently licensed by SSPORTS to operate equipment to be used. Has been briefed by the project supervisor and has walked the job site to sight utility markings. Does not perform excavation without spotter in place at the point of excavation.

   f. Spotter — Individual who has been briefed by the project supervisor and is in place at the point of excavation. Maintains visual sighting at the point of excavation to identify any unidentified utilities or obstacles in the path of excavation. Ensures the safety of the equipment operator.

4. **References:**

   a. CFR 1926.651 Specific Excavation Requirements

   b. CCR 1541 Excavations

5. General Requirements: The following instructions and requirements are provided in flow chart format in Figure 1. Note that where multiple responsibilities are identified, the primary responsibility lies with the first position listed unless otherwise stated in the work instruction.

a. The determination of the need for excavation work will be made by the Project Engineer (PE) with the concurrence of the Program Manager (PM).

b. The location and extent of the excavation, depth, length, width, will be identified in the work instruction. These dimensions will be general in nature. Final concurrence to the extent of the excavation will be made by the Project Engineer and the Project Supervisor, when the excavation site is being laid out for the Regional Notification Center (i.e., Utility Service Alert (USA)).

c. The estimated location of utility installations, such as sewer, telephone. fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during the excavation work, shall be determined prior to opening the excavation.

d. The Regional Notification Center (USA in California and Nevada) and all known owners of underground facilities in the area who are not members of the Notification Center shall be advised of the proposed work at least two (2) working days prior to the start of any digging or excavation work. The location request number, provided by the Notification Center, shall be annotated in the work instruction.

e. The established utility excavation area of concern will be delineated with white paint on paved surfaces or with flags or stakes on unpaved surfaces.

f. The Project Engineer and the Project Supervisor will review the local utility installation maps (site maps) to verify the on-site identification of all anticipated utilities. Any discrepancies will be addressed to the utility/installation owners and resolved prior to opening the excavation.

g. The Project Engineer and the Project Supervisor will investigate the possibilities of de-energizing or de-pressurizing all active utilities, within the area of concern, prior to opening the excavation. The Program Manager's concurrence is required, in writing, prior to opening an excavation with energized or pressurized lines.

h. The Project Supervisor shall verify that all commitments, requirements and instructions for excavation safety have been met. Commitments, requirements and instructions include the following:

1. A site specific pre-excavation briefing has occurred and documented in the Site Safety Log. This briefing will include the operator and the spotter, will occur on-site, and utility markings will be sighted.
2. The Operator's license has been verified and is in the possession of the operator.
3. The utilities sketch and utilities site safety form have been documented in the Site Safety Log with the work instruction.

4. The Project Supervisor, equipment operator, and spotter have sighted the anticipated area of excavation, sighted the utility markings both on the ground and on the utilities sketch and have discussed the operations anticipated to occur, including the need to establish communications.

5. The Project Supervisor will be at the point of excavation until all utilities of concern are located and exposed.

6. The Project Supervisor will ensure that the spotter is present at all times during the use of powered excavation equipment.

i. Utilities within the five (5) foot extension of the excavation area will be exposed every 100 feet, or as necessary, to determine that their exact location is outside of the anticipated excavation area. Utilities identified within the established utility excavation area of concern, will be exposed by the use of hand tools or other "safe and acceptable means" prior to the use of powered equipment. Those utilities inside the excavation area will have the soil within two (2) feet (horizontally and vertically) removed by the use of hand tools prior to the use of powered equipment. DO NOT USE powered equipment within two (2) feet of active utilities.

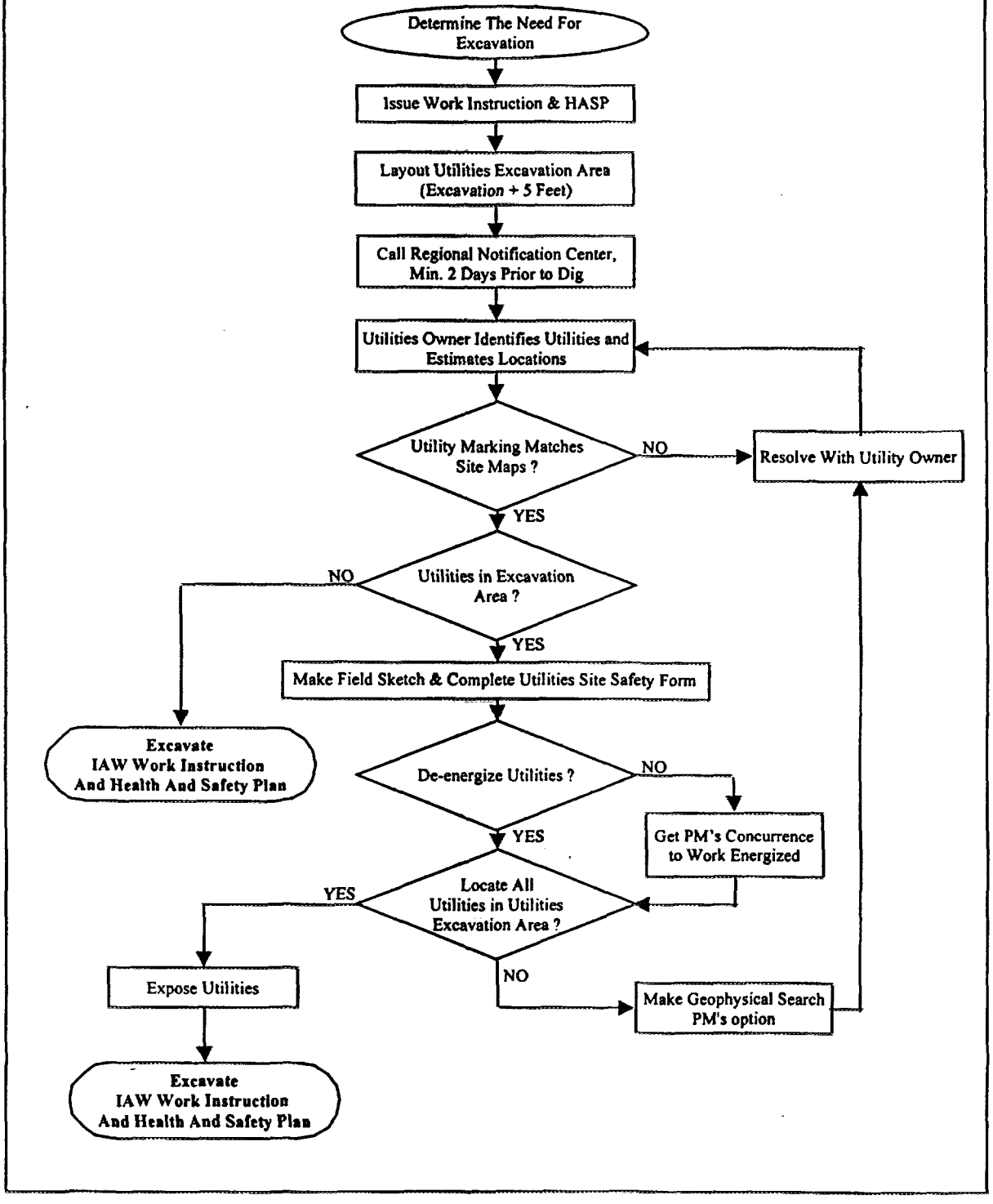
j. If the anticipated utilities are not located within two (2) feet of the estimated location provided by the utility owner, the utility owner will be notified and the location resolved before the use of powered equipment.

k. Once all utilities are located and exposed, the Project Supervisor, may authorize the use of power tools. The use of power tools within two (2) feet of utilities is not authorized at any time.

6. **Operator/Spotter Responsibilities:** Only the Project Supervisor will assign the duties of equipment operator and spotter. The equipment operator and spotter are assigned and briefed to work as a team. The equipment operator will not perform excavation work unless both the equipment operator and the spotter have received a briefing from the Project Supervisor and the assigned spotter is at the point of excavation. The spotter is responsible to maintain visual sighting of the point of excavation to identify any unidentified utilities or obstacles in the path of excavation. The spotter is the equipment operator's second pair of eyes and is there to ensure the safety of the equipment operator, personnel in the area, and to prevent damage to underground utilities. The spotter is responsible to monitor the immediate area of the excavation and equipment and to alert the equipment operator of any personnel or obstacles in the path of excavation.

7. **Regional Notification Center:** Underground Service Alert (USA) is the Regional Notification Center for California and Nevada (California Government Code 4216). The telephone number for notification is 1-800-227-2600. Hours of operation are 0600 hours to 1700 hours, Monday through Friday, except Holidays. Failure to notify will place the employee in an unsafe condition and will amount to a failure to provide a "safe work environment" for the employee.

Utilities Excavation Safety



UTILITIES SITE SAFETY FORM

Site: _____

UTILITY	HAZARD TO WORK	VULNERABLE TO DAMAGE	POLLUTION HAZARD	LOCATION	DATE	SIGNATURE
Fiber Optic Local Area Network (LAN) Conduit	No	Yes	No			
Firefighting High-Pressure Mains	Yes	Yes	No			
Freshwater Piping	Yes	Yes	No			
Fuel Oil Distribution Piping (inactive)	Yes	Yes	Yes			
High-Pressure Compressed Air Piping	Yes	Yes	No			
High-Voltage Above-Ground Electric Power	Yes	Yes	No			
High Voltage Underground Electric Power	Yes	Yes	No			
Industrial Waste-water Treatment Sewer Piping	Yes	Yes	Yes			
Natural Gas Piping	Yes	Yes	No			
Saltwater Piping	Yes	Yes	No			
Sanitary Sewer Piping	Yes	Yes	Yes			
Steam Condensate Piping	Yes	Yes	Yes			
Steam (hot) Piping	Yes	Yes	Yes			
Stormwater Sewer Piping	No	Yes	No			
Telephone Lines	No	Yes	No			
Wheeler Vacuum System Piping	No	Yes	Yes			
Other:						

The Site Foreman or his designee shall complete this form and a hand-drawn sketch of the utilities USA identifies as present on the site. Include pipe size.

USA Location Request No.: _____.

TWD 98-1562
Enclosure (5)
Revision A

UNDERGROUND UTILITY LOCATION SKETCH

Date _____

Company: _____ Point of Contact: _____

Phone: _____ Fax: _____

Location: _____

Description: _____